CHESAPEAKE UTILITIES CORPORATION

October 31, 2019

Ms. Donna Nickerson, Secretary
Delaware Public Service Commission
861 Silver Lake Boulevard
Cannon Building, Suite 100
Dover, Delaware 19904

RE: Chesapeake Utilities Corporation, Environmental Rider Rate to be effective December 1, 2019

Dear Ms. Nickerson:

Enclosed for filing is Chesapeake Utilities Corporation's ("Chesapeake") application for approval of its Environmental Rider rate to be effective for service rendered on and after December 1, 2019.

Pursuant to the provisions of Chesapeake's Environmental Rider tariff clause, Chesapeake proposes to change its Environmental Rider rate level of $0.0004 per Ccf to a surcharge of $0.0005 per Ccf. As a result of this proposed change, an average residential heating customer using 700 Ccf per year will experience an annual increase of approximately 0.01%, or $0.07. During the winter heating season, an average residential heating customer using 120 Ccf per month will experience a monthly increase of approximately 0.01%, or $0.01.

Should you have any questions with regard to this filing, please contact me at 302-734-6727.

Sincerely,

/s/ Marie E. Kozel
Marie E. Kozel
Regulatory Analyst III

Enclosure

Cc: Malika Davis, Regulatory Policy Administrator
Shona Marshall, Public Utilities Analyst
Andrew C. Slater, Public Advocate
Regina A. Iorii, Deputy Attorney General

For PSC Use Only:
Docket No. _____
Filing Date: _____
Reviewer: _____
Given to: _____

DELAWARE PUBLIC SERVICE COMMISSION
FILING COVER SHEET

1. NAME OF APPLICANT: Chesapeake Utilities Corporation

2. TYPE OF FILING:

RATE CHANGE	X
FUEL ADJUSTMENT	__
ADMINISTRATIVE	__
CPCN	__
NEW SERVICE OFFERING	__
OTHER	__

IF A TELECOMMUNICATIONS FILING, WHAT TYPE OF SERVICE IS IMPACTED? (PLEASE CHECK)

BASIC____ COMPETITIVE____ DISCRETIONARY

3. PROPOSED EFFECTIVE DATE: December 1, 2019

IS EXPEDITED TREATMENT REQUESTED? YES ___ NO X

4. SHORT SYNOPSIS OF FILING: In the matter of the application of Chesapeake Utilities Corporation for approval of its Environmental Rider rate to be effective December 1, 2019.

5. DOES THIS FILING RELATE TO PENDING DOCKETS? YES___ NO X

IF SO, PLEASE LIST DOCKET(S) NO(S):

6. IS PUBLIC NOTICE REQUIRED? YES X NO
IF YES, PLEASE ATTACH COPY OF PROPOSED PUBLIC NOTICE.

7. APPLICANT'S CONTACT PERSON:

(NAME)	Marie E. Kozel
(TITLE)	Regulatory Analyst III
(TELE. NO.)	302.241.6594
(FAX NO.)	

8. DID YOU PROVIDE A COMPLETE COPY OF THE FILING TO THE PUBLIC ADVOCATE?

YES X NO ___ IF SO, WHEN? October 31, 2019

9. FILING FEE ENCLOSED: $100.00
(AMOUNT)

NOTE: House Bill 681, enacted into law 7/13/98, authorizes the Commission to recover the cost of time spent by in-house staff to process all filings initiated after the date of enactment. You may be required to reimburse the Commission for staff time.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF DELAWARE

IN THE MATTER OF THE APPLICATION OF CHESAPEAKE UTILITIES CORPORATION FOR APPROVAL OF ITS ENVIRONMENTAL RIDER RATE TO BE EFFECTIVE DECEMBER 1, 2019	)))))	P.S.C. DOCKET NO. 19-

CERTIFICATE OF SERVICE

I, Marie E. Kozel, do hereby certify that on October 31, 2019, a copy of Chesapeake Utilities Corporation – Delaware Division's application for approval of its Environmental Rider Rate to be effective for service rendered on and after December 1, 2019 was issued to the following persons in the manner indicated:

VIA ELECTRONIC DELIVERY
MALIKA DAVIS, REGULATORY POLICY ADMINISTRATOR
DELAWARE PUBLIC SERVICE COMMISSION
861 SILVER LAKE BLVD
DOVER, DELAWARE 19904

SHONA MARSHALL, PUBLIC UTILITIES ANALYST
DELAWARE PUBLIC SERVICE COMMISSION
861 SILVER LAKE BLVD
DOVER, DELAWARE 19904

VIA ELECTRONIC DELIVERY
ANDREW SLATER, PUBLIC ADVOCATE
DIVISION OF THE PUBLIC ADVOCATE
29 SOUTH STATE STREET
DOVER, DE 19904

Marie E. Kozel
Regulatory Analyst III

"DRAFT"

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF DELAWARE

IN THE MATTER OF THE APPLICATION OF CHESAPEAKE UTILITIES CORPORATION FOR APPROVAL OF ITS ENVIRONMENTAL RIDER RATE TO BE EFFECTIVE DECEMBER 1, 2019 (FILED OCTOBER 31, 2019)	))))))	**PSC DOCKET NO. 19-**

PUBLIC NOTICE

TO: ALL NATURAL GAS CUSTOMERS OF CHESAPEAKE UTILITIES CORPORATION AND ANY OTHER INTERESTED PERSONS

Pursuant to the environmental remediation recovery mechanism approved by the Commission in PSC Order No. 4104 on December 19, 1995 in PSC Docket No. 95-73, Chesapeake Utilities Corporation ("Chesapeake") has filed with the Delaware Public Service Commission ("Commission") an application proposing to increase the Environmental Rider ("ER") from $0.0004 per Ccf to a surcharge of $0.0005 per Ccf to be effective with service rendered on and after December 1, 2019. As a result of the proposed change, an average residential heating customer using 700 Ccf per year will experience an annual increase of approximately 0.01% or $0.07 on their bill.

The Commission has permitted the proposed Environmental Rider Rate to become effective with usage on and after December 1, 2019, subject to refund and pending the Commission's final decision after evidentiary hearings and any other proceedings that may be necessary.

The Commission will conduct evidentiary hearings, to be scheduled at a later date, concerning this Application. The Commission's final decision will be based on the evidence

presented at such hearings.

If you wish to formally participate as a party in this matter, with the right to present evidence and be represented by counsel, you must file with the Commission a written petition asking for leave to intervene in accordance with the requirements of the Commission's Rules of Practice and Procedure (26 *Del. Admin. C.* §1001-2.9) ***on or before _____, 2019.*** All such petitions should be sent to the Commission's address listed above with attention to "PSC Docket No. 19-_____." Petitions filed after the deadline of _____, 2019, will not be considered except for good cause shown.

You are invited to review Chesapeake's application and supporting documents to determine how your interests may be affected by going to DelaFile (http://delafile.delaware.gov), the Commission's file management system, and by searching for Docket No. 19-_____.

If you would like to review documents at the Commission's offices, please contact Donna Nickerson at (302) 736-7500 or by sending an email addressed to donna.nickerson@state.de.us. You may also review copies of Chesapeake's application and supporting documents at the office of the Division of the Public Advocate located at either 820 North French Street, 4th Floor, Wilmington, Delaware 19801 or 29 South State Street, Dover, Delaware 19901. Please call either (302) 577-5077 or (302) 241-2555 to arrange for a time to review the documents at either of those locations.

If you wish to request copies of documents in this matter, please submit a Freedom of Information Act Request Form. The link to this form can be found on the Commission's website, http://depsc.delaware.gov or by visiting this web address: https://delafile.delaware.gov/Complaints/FOIA.aspx. The Commission will respond to your request in accordance with the Delaware Freedom of Information Act, 29 Del. C. ch. 100.

If you have a disability and wish to participate or to review the materials in this matter, please contact the Commission to discuss any auxiliary aids or services you might need to help you. You may contact the Commission in person, by writing, by telephone (including text telephone), by Internet e-mail, or other means. If you have questions about this matter, you may call the Commission at 1-800-282-8574 (toll-free in Delaware) or (302) 736-7500 (voice and text telephone). You may also send questions regarding this matter by Internet e-mail addressed to Malika.Davis@delaware.gov.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF DELAWARE

IN THE MATTER OF THE APPLICATION OF CHESAPEAKE UTILITIES CORPORATION FOR APPROVAL OF ITS ENVIRONMENTAL RIDER RATE TO BE EFFECTIVE DECEMBER 1, 2019	**)))))**	**P.S.C. DOCKET NO. 19-**

Chesapeake Utilities Corporation (hereinafter sometimes called "Applicant") pursuant to 26 Del. C. 201 and 304, makes the following application for approval by the Commission of its Environmental Rider ("ER") to be effective for service rendered on and after December 1, 2019.

1. Applicant is Chesapeake Utilities Corporation. All communications should be addressed to the Applicant at the following addresses, attention:

Marie E. Kozel
Regulatory Analyst III
500 Energy Lane, Suite 100,
Dover, Delaware 19901
302.734-6727
mkozel@chpk.com

2. Pursuant to the provisions of Applicant's Environmental Rider tariff clause, Applicant is requesting an increase to Applicant's current Environmental Rider rate level of $0.0004 per Ccf to $0.0005 per Ccf for all firm delivery service customers effective for service rendered on and after December 1, 2019 and thereafter until changed by further order of the Delaware Public Service Commission.

3. The full calculation of the proposed Environmental Rider rate level to be effective for service rendered on and after December 1, 2019 is set forth in the Direct Testimony of Marie E. Kozel on behalf of Applicant. The reasons and basis for the

proposed change in Applicant's present Environmental Rider rate level are more fully explained by direct testimony filed herewith.

WHEREFORE, the Applicant prays as follows:

1. That the Commission file this Application and schedule it for hearing; and
2. That the Commission approve the change to the Applicant's Environmental Rider rate of $0.0004 per Ccf to $0.0005 per Ccf for all firm delivery service customers, and authorize the Company to keep the proposed rate in effect on a temporary basis, subject to refund for usage on and after December 1, 2019.

SIGNATURES APPEAR ON THE FOLLOWING PAGE

CHESAPEAKE UTILITIES CORPORATION

BY: _____
Shane Break
Assistant Vice President

BY: _____
Marie E. Kozel
Regulatory Analyst III

DATED: October 31, 2019

DATED: October 31, 2019

STATE OF DELAWARE)
)
COUNTY OF KENT)

AFFIDAVIT OF SHANE BREAKIE

Be it remembered that on this 31st day of October, 2019, personally appeared before me, a notary public for the State and County aforesaid, Shane Breakie, who being by me duly sworn, did depose and say that he is Assistant Vice President for Chesapeake Utilities Corporation, a Delaware corporation and insofar as the Application of Chesapeake Utilities Corporation states facts, said facts are true and correct, and insofar as those facts are not within his personal knowledge, he believes them to be true, and that the schedules accompanying this application and attached hereto are true and correct copies of the originals of the aforesaid schedules, and that he has executed this Application on behalf of the Company.

Shane Breakie
Assistant Vice President

SWORN TO AND SUBSCRIBED before me the day and year above written.

CHRISTOPHER JAMES METZGER NOTARY PUBLIC MY COMMISSION EXPIRES ON 07-05-20 STATE OF DELAWARE

Notary Public
My Commission Expires:
July 5, 2020

RATE SCHEDULE "ER"

ENVIRONMENTAL RIDER

PURPOSE

The purpose of this rider is to recover reasonable environmental costs associated with cleaning up former manufactured gas plants (MGP). Applicable environmental costs are those incurred as a result of, but not limited to, investigation, testing, monitoring, remediation (including remediation of the groundwater), land acquisition, and legal costs relating to former MGP sites, disposal sites, or sites to which material may have migrated as a result of the earlier operation and/or decommissioning of MGPs. Environmental costs expended will be offset by any payments related to these costs received by the Company from insurance proceeds or from another party. Environmental costs shall not include expenses incurred in connection with litigation by third parties claiming personal injury or by third parties claiming damage to their property as a result of the operation or decommissioning of MGPs or as a result of the migration of materials from MGP sites.

APPLICABILITY

The environmental rider will be applicable to all firm Delivery Service customers.

OPERATION OF THE RIDER

The Company will file with the Commission a copy of the environmental rider computation at least 30 days prior to the proposed effective date, which will be each December 1.

The calculation filed will be supported by all bills and receipts relating to the amount of any environmental costs incurred in the preceding Environmental Cost Year for which the Company seeks to begin recovery. In the same filing, the Company shall include similar material and information to support any expenses and/or recoveries resulting from Third Party claims. The Company shall also submit in its annual filing a projection of environmental costs for the following Environmental Cost Year based on the best information available at the time of filing.

RATE

The rate for the rider effective December 1, 2019 is $0.0005 per Ccf.

RATE SCHEDULE "ER"

ENVIRONMENTAL RIDER

PURPOSE

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RATE

The rate for the rider effective December 1, ~~2018~~ 2019 is $0.~~0004~~ 0005 per Ccf.

BEFORE THE DELAWARE PUBLIC SERVICE COMMISSION

IN THE MATTER OF THE APPLICATION OF CHESAPEAKE UTILITIES CORPORATION FOR APPROVAL OF ITS ENVIRONMENTAL RIDER RATE TO BE EFFECTIVE DECEMBER 1, 2019	**)**	**P.S.C. DOCKET NO. 19 -**

DIRECT TESTIMONY OF MARIE E. KOZEL

On Behalf of Chesapeake Utilities Corporation

Delaware Division

Submitted for filing: October 31, 2019

PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.

A. My name is Marie E. Kozel and I am a Regulatory Analyst III with Chesapeake Utilities Corporation. My business address is 500 Energy Lane, Suite 100, Dover, Delaware 19901.

Q. BRIEFLY DESCRIBE YOUR EDUCATION AND RELEVANT PROFESSIONAL BACKGROUND.

A. I received a Bachelor of Science Degree in Finance with a minor in English from La Salle University in Philadelphia, Pennsylvania and a Masters of Business Administration from Wilmington University in Wilmington Delaware. I was hired by Chesapeake Utilities Corporation in November 2007. As a Regulatory Analyst III, my responsibilities include gas cost recovery, rate of return analysis, rate case preparation, and budgeting for Chesapeake Utilities – Natural Gas Distribution Delaware Division. Prior to my role as a Regulatory Analyst III, I was a Financial Business Analyst responsible for the consolidation and preparation of the annual budget, strategic plan and monthly forecast including Senior Management and Board of Directors reporting. Prior to that I was a Gas Supply Analyst II responsible for all matters associated with gas supply and its procurement for Chesapeake Utilities Corporation – Delmarva Natural Gas. Immediately prior to joining Chesapeake, I was employed by ING Financial Services in West Chester, PA as Senior Financial Analyst in Operational Risk Management for the Retail Life Division, where I performed audits for the

purpose of compliance with the Sarbanes Oxley Act of 2002. My responsibilities also included the implementation of operational risk management objectives, exposure analysis and awareness education for divisional staff. I have also held positions with JP Morgan Chase and Radian Guaranty Inc., where I was responsible for revenue and expense analysis, budget preparation and staff management.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY IN THIS PROCEEDING?

A. The purpose of my direct testimony in this proceeding is to present and discuss the calculation of Chesapeake's proposed Environmental Rider ("ER") rate to be effective for service rendered on and after December 1, 2019 in accordance with the Company's natural gas tariff.

Q. HAVE YOU INCLUDED ANY ATTACHMENTS WITH YOUR DIRECT TESTIMONY?

A. Yes. My direct testimony includes Attachments MEK-1, MEK-2, MEK-3, MEK-4, and MEK-5. These attachments are provided as support to the determination of the Company's proposed Environmental Rider rate level and are described further in my testimony. Also included are Exhibits 1, 2, and 3, which will be referenced later in my testimony.

Q. PLEASE EXPLAIN THE PURPOSE OF THE ENVIRONMENTAL RIDER.

A. As provided in Chesapeake's tariff, at Sheet No. 45, the purpose of the Environmental Rider is to allow Chesapeake "to recover environmental expenses associated with cleaning up former manufactured gas plants ("MGP")." The site included in this filing is the former Seaford Town Gas location, comprised of approximately 0.79 acres on Budd Street in Seaford, Delaware ("Seaford Town Gas Site").

As stated in the tariff, applicable environmental costs are "those incurred as a result of, but not limited to, investigation, testing, monitoring, remediation (including remediation of the groundwater), land acquisition, and legal costs relating to former MGP sites, disposal sites, or sites to which material may have migrated as a result of the earlier operation and/or decommissioning of MGP's." The Environmental Rider mechanism was approved by the Commission in Order No. 4104 in PSC Docket No. 95-73 issued on December 19, 1995.

Q. WHY IS CHESAPEAKE NOW INCURRING ENVIRONMENTAL COSTS RELATING TO THE SEAFORD TOWN GAS SITE?

A. By letter dated December 5, 2013, the Delaware Department of Natural Resources & Environmental Control ("DNREC") notified Chesapeake that it would be conducting a facility evaluation of the Seaford Town Gas Site ("Site"). (See Exhibit 1.) After its facility evaluation, by letter dated February 24, 2015, DNREC notified Chesapeake of its liability as an owner of the

Site, pursuant to Section 9105 of the Delaware Hazardous Substance Cleanup Act. (See Exhibit 2.) In the notice, DNREC encouraged Chesapeake to enter into a Voluntary Cleanup Program (VCP), which would allow for an expedited cleanup process with reduced transaction costs.

On April 2, 2015, Chesapeake submitted a VCP application to DNREC and, on September 23, 2015, Chesapeake and DNREC entered into a VCP. (See Exhibit 3.) Under the "Operational History" section, the VCP states that, according to DNREC, the Site was a "coal gas plant" until approximately 1950, when Chesapeake purchased the Site and reportedly changed it to a propane air plant. (See Exhibit 3, Appendix A, at page 4.) Although the specific operational history of the site is uncertain, it is clear that the contaminants at the site are associated with manufactured gas (*i.e.*; "coal gas") production.

The VCP calls for additional sampling and investigation of the Site to determine whether a cleanup of the Site is necessary. (See Exhibit 3, at paragraph 3.) Chesapeake has incurred expenses relating to the investigation of the Site and the preparation of the VCP, which it has included for recovery in this application.

Q. WHO IS SUBJECT TO THE ENVIRONMENTAL RIDER RATE?

A. The Environmental Rider rate is applicable to all firm "Delivery Service" customers on the Company's distribution system.

Q. PLEASE EXPLAIN THE DETERMINATION OF THE ENVIRONMENTAL RIDER RATE.

A. There are several time periods and factors used in the calculation of this rate as explained in the Delaware Division's natural gas tariff, specifically tariff Sheet Nos. 45, 45.1, and 45.2. There is an Environmental Cost Year, a Recovery Year, an Amortization Factor, and a Reconciliation Factor. The Environmental Rider rate is equal to the sum of the amortization and reconciliation factors plus the Delaware P.S.C. Assessment divided by the projected firm delivery service consumption for the new recovery period of December 1 through November 30. The factors and time periods used in this calculation are described below.

Environmental Cost Year

The Environmental Cost Year ("ECY") is each October 1 through September 30 and represents the time period over which environmental costs are incurred and any payments from other parties are netted against the costs for this period.

Environmental Recovery Year

The Environmental Recovery Year is each December 1 through November 30 and represents the time period over which the annually calculated Environmental Rider rate will be billed to firm delivery service customers.

Amortization Factor

Recovery of net environmental costs incurred during an Environmental Cost Year will be accomplished through a five-year amortization, offset by an

imputed deferred tax benefit associated with the amortization of those environmental costs. A net recovery amount is calculated for each of the five years of amortization scheduled for each Environmental Cost Year. The Amortization Factor for any year will be comprised of the total net annual amounts scheduled for that year.

Reconciliation Factor

The Reconciliation Factor is equal to the over/under collection of the Environmental Rider. Over/under collection is the accumulated net over or under recovery of the environmental costs during the twelve-month period ending with the month of August immediately preceding the beginning of the next Recovery Year.

Q. WHAT INTERNAL REVIEW PROCEDURES DOES THE COMPANY EMPLOY WITH RESPECT TO PROCESSING ENVIRONMENTAL INVOICES?

A. All environmental cost invoices submitted to the Company are first reviewed internally by the individual primarily responsible for managing the Company's environmental activities. The invoices are then submitted to senior management for final review and approval. This review process takes place prior to the payment of the environmental invoices to the appropriate vendor.

Q. WHAT ENVIRONMENTAL RIDER RATE LEVEL IS THE COMPANY PROPOSING IN THIS PROCEEDING TO BE EFFECTIVE DECEMBER 1, 2019?

A. The Delaware Division is proposing to increase its current Environmental Rider rate surcharge from $0.0004 per Ccf to $0.0005 per Ccf.

Q. AS YOU HAVE ALREADY MENTIONED, THERE ARE NUMEROUS FACTORS AND TIME PERIODS USED IN THE CALCULATION OF THIS RATE. PLEASE DESCRIBE HOW YOU CALCULATED THE PROPOSED ENVIRONMENTAL RIDER RATE LEVEL PROPOSED IN THIS PROCEEDING.

A. As shown on Attachment MEK-1, Chesapeake's Delaware Division incurred $67,834.42 of actual environmental expenses during the Environmental Cost Year ended September 30, 2019, consisting of consulting, legal and other expenses for the Seaford Town Gas Site to be recovered in this Recovery Year. The Company considers the information contained in Attachment MEK-1 confidential and proprietary.

Attachment MEK-2 demonstrates the amortization of the total costs for the ECY ended September 30, 2019 over five years subtracting out the deferred tax credit for each year, resulting in the recovery amount for each period. The actual recovery amount for the ECY ended September 30, 2019 included in the Environmental Rider rate level to be effective for service rendered on and after December 1, 2019 is $11,872.77.

Attachment MEK-3 is a summary of all Environmental Cost Year scheduled recoveries. This attachment shows a “net recovery” amount of $45,642.72 for the recovery year beginning December 1, 2019, which includes recovery for the fifth amortization year of the ECY ended September 30, 2015, the fourth amortization year of the ECY ended Sept 30, 2016, the third amortization year of the ECY ended September 30, 2017, the second amortization year of the ECY ended September 30, 2018, the first amortization year of the ECY ended September 30, 2019 and the (Over)/Under collection balance from the previous period. The “net recovery” amount of $45,642.72 is then grossed up by 0.3% in order to recover the Delaware P.S.C. Assessment. As shown on this attachment, the “total net recovery” amount is $45,780.06 ($45,642.71 / (1 - .003)).

Attachment MEK-4 calculates the (Over)/Under collection of the environmental rider from September 2018 through August 2019. The balance in Attachment MEK-4 represents an over collection of revenues in the amount of $1,848.00 which is applied to the recovery of costs in Attachment MEK-3.

Attachment MEK-5 demonstrates the calculation of the Environmental Rider rate level by dividing the “total net recovery” amount from Attachment MEK-3 of $45,780.06 by the projected firm sales for the Recovery Year of 8,742,672 Mcf, resulting in a rate of $0.005 per Mcf or $0.0005 per Ccf.

Q. PLEASE DESCRIBE HOW THE FIRM SALES FORECAST USED IN THE CALCULATION OF THE ENVIRONMENTAL RIDER RATE LEVEL WAS DEVELOPED.

A. Forecasted sales for the twelve-month period of December 1, 2019 through November 30, 2020 were developed based upon the actual sales volumes billed to each customer class during each month for the prior year with adjustments to reflect weather, customer growth, and customers switching rate classes. The forecasted sales volumes are based on normal weather that is developed on a ten-year average for July 2009 through June 2019.

Q. WHAT EFFECT WILL THIS PROPOSED ENVIRONMENTAL RIDER HAVE UPON THE AVERAGE RESIDENTIAL HEATING CUSTOMERS?

A. The average residential heating customer using 700 Ccf per year will experience an annual increase of $0.07 or 0.01%.

Q. IS THE INFORMATION SET FORTH IN ATTACHMENTS MEK-1, MEK-2, MEK-3, MEK-4, and MEK-5 TRUE AND CORRECT TO THE BEST OF YOUR KNOWLEDGE AND BELIEF?

A. Yes, it is.

Q. BASED ON THE INFORMATION AVAILABLE, WHAT IS THE COMPANY'S PROJECTION OF ENVIRONMENTAL COSTS FOR THE NEXT ENVIRONMENTAL COST YEAR, OCTOBER 1, 2019 THROUGH SEPTEMBER 30, 2020?

A. The level of costs that will be incurred over the next Environmental Cost Year will depend largely on the remedial activities that may be required following the pending field investigation. In addition, the cost will be impacted by whether the required remedial activities, if any, occur during the next Environmental Cost Year or the year after. However, based on estimates provided by our consultants, the Company projects that its environmental costs for the next Environmental Cost Year will be approximately $225,000.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

DATED: October 31, 2019

STATE OF DELAWARE)
)
COUNTY OF KENT)

AFFIDAVIT OF MARIE E. KOZEL

MARIE E. KOZEL, being first duly sworn according to law, on oath deposes and says that she is the witness whose testimony appears as "Chesapeake Utilities Corporation, Delaware Division, Direct Testimony of Marie E. Kozel; that, if asked the questions which appear in the text of the direct testimony, she would give the answers that are therein set forth; and that he adopts this testimony as her sworn direct testimony in these proceedings.

Marie E. Kozel

Then personally appeared this 31st day of October 2019 the above-named Marie E. Kozel and acknowledged the foregoing Testimony to be her free act and deed. Before me,

CHRISTOPHER JAMES METZGER NOTARY PUBLIC MY COMMISSION EXPIRES ON 07-05-20 STATE OF DELAWARE

Notary Public
My Commission Expires:
July 5, 2020

Chesapeake Utilities Corporation
Delaware Division
Environmental Expenses
Environmental Cost Year (October 1, 2018 - September 30, 2019)
REDACTED

ATTACHMENT MEK-2

Chesapeake Utilities Corporation
Delaware Division
Recovery Schedule
Environmental Cost Year Ending September 30, 2019

Expenses	$67,834.42
Cost of Capital	7.53%
Tax Rate	27.87%
Adj Cost of Capital	11.20%

Year	Amortization	Unamortized Balance	Income Taxes	Deferred Tax Account	Deferred Tax Benefit	Actual Recovery	To be Recovered During Recovery Year Beginning
1	$13,566.88	$54,267.54	$3,781.50	$15,125.99	$1,694.11	$11,872.77	1-Dec-2019
2	$13,566.89	$40,700.65	$3,781.50	$11,344.49	$1,270.58	$12,296.31	1-Dec-2020
3	$13,566.88	$27,133.77	$3,781.50	$7,563.00	$847.06	$12,719.82	1-Dec-2021
4	$13,566.89	$13,566.88	$3,781.50	$3,781.50	$423.53	$13,143.36	1-Dec-2022
5	$13,566.88	$0.00	$3,781.50	$0.00	$0.00	$13,566.88	1-Dec-2023
Total	$67,834.42		$18,907.50		$4,235.28	$63,599.14	

ATTACHMENT MEK-3

Chesapeake Utilities Corporation
Delaware Division
Summary of Environmental Cost Year Scheduled Recoveries

Recovery Year Beginning		ECY Ending 30-Sep-15		ECY Ending 30-Sep-16		ECY Ending 30-Sep-17		ECY Ending 30-Sep-18		ECY Ending 30-Sep-19	Total Recovery	(Over)/Under Collection Balance	Net Recovery
1-Dec-2015	1	$4,532.84											
1-Dec-2016	2	$4,844.08	1	$14,698.81									
1-Dec-2017	3	$5,155.32	2	$15,708.07	1	$9,460.85							
1-Dec-2018	4	$5,466.56	3	$16,717.33	2	$9,987.57	1	$1,544.18					
1-Dec-2019	5	$5,777.79	4	$17,726.60	3	$10,514.29	2	$1,599.27	1	$11,872.77	$47,490.72	($1,848.00)	$45,642.72
1-Dec-2020			5	$18,735.85	4	$11,041.02	3	$1,654.35	2	$12,296.31			
1-Dec-2021					5	$11,567.73	4	$1,709.44	3	$12,719.82			
1-Dec-2022							5	$1,764.52	4	$13,143.36			
1-Dec-2023									5	$13,566.88			
		$25,776.59		$83,586.66		$52,571.46		$8,271.76		$63,599.14	$47,490.72	($1,848.00)	$45,642.72

P.S.C. Assessment	0.3%	=	($5.56)	= $137.34
Total Net Recovery		**=**	**($1,853.56)**	**= $45,780.06**

Chesapeake Utilities Corporation
Delaware Division
Environmental Rider
Over/Under Collection
September 2017 - August 2018

Over/Under From Previous Environmental Year

		Firm Estimated Volume (Mcf)	Rate Net of PSC Assessment (Ccf)	Estimated Recovery Net of PSC Assess.	Actual Recovery Net of PSC Assess.	(Over)/Under Recovery Net of PSC Assess.
2018	September	414,014	$0.000374	$1,548.72	$1,368.81	$179.91
	October	495,769	$0.000374	$1,854.55	$1,779.06	$75.49
	November	642,368	$0.000374	$2,402.93	$2,815.75	($412.82)
	December	1,013,085	$0.000370	$3,746.68	$4,281.23	($534.55)
2019	January	1,441,758	$0.000370	$5,332.04	$5,958.22	($626.18)
	February	1,265,759	$0.000370	$4,681.14	$4,560.64	$120.50
	March	1,133,397	$0.000370	$4,191.63	$4,230.18	($38.55)
	April	812,199	$0.000370	$3,003.75	$3,496.03	($492.28)
	May	515,140	$0.000370	$1,905.14	$1,974.71	($69.57)
	June	420,317	$0.000370	$1,554.45	$1,486.33	$68.12
	July	332,428	$0.000370	$1,229.42	$1,314.33	($84.91)
	August	365,592	$0.000370	$1,352.07	$1,385.23	($33.16)
	Sub-total	8,851,828		$32,802.52	$34,650.52	($1,848.00)

2019	September	423,090	$0.000370	$1,564.72
	October	491,733	$0.000370	$1,818.58
	November	653,068	$0.000370	$2,415.24
	Subtotal	1,567,892		$5,798.54
	12 Mos. Total	10,419,719		$38,601.06

Current (Over)/Under Balance = ($1,848.00)

ATTACHMENT MEK-5

Chesapeake Utilities Corporation
Delaware Division
Environmental Rider Rate Calculation
Recovery Year December 1, 2019 - November 30, 2020

	Projected 31-Dec-2019	Projected 31-Jan-2020	Projected 29-Feb-2020	Projected 31-Mar-2020	Projected 30-Apr-2020	Projected 31-May-2020	Projected 30-Jun-2020	Projected 31-Jul-2020	Projected 31-Aug-2020	Projected 30-Sep-2020	Projected 31-Oct-2020	Projected 30-Nov-2020	Total
Projected Mcf Sales													
Firm Sales													
Residential Service - 1	10,345	21,200	23,405	16,600	10,287	4,582	2,245	1,357	1,210	1,574	3,334	7,466	103,607
Residential Service - 2	384,513	611,274	656,828	503,473	317,803	147,678	67,859	42,245	37,694	49,573	108,238	254,015	3,181,194
General Service	34,369	67,136	73,654	53,163	32,639	13,516	5,521	2,805	2,440	3,713	9,320	21,775	320,051
Medium Volume Service	36,225	60,175	62,903	49,422	30,861	15,413	7,260	4,715	4,369	5,708	11,647	25,185	313,883
Large Volume Service	22,823	37,710	37,455	33,029	18,492	8,736	5,585	4,345	4,225	8,231	14,864	21,729	217,224
High Load Factor Service	39,571	31,679	33,001	31,103	27,333	23,663	25,486	26,066	26,350	23,415	24,815	26,326	338,810
Gas Lighting													0
Sub-Total Firm Sales	527,847	829,174	887,247	686,789	437,415	213,589	113,957	81,533	76,289	92,214	172,218	356,496	4,474,769
Firm Transportation													
Transportation - Commercial	153,111	193,272	191,899	180,758	100,188	72,293	55,586	46,504	52,807	49,776	75,685	143,744	1,315,622
Transportation - Industrial	258,305	272,666	259,424	271,535	249,590	238,983	221,584	201,509	224,561	220,373	270,168	263,584	2,952,281
Sub-Total Firm Transportation	411,416	465,938	451,323	452,293	349,778	311,275	277,170	248,012	277,368	270,149	345,853	407,328	4,267,903
Total Firm Mcfs	939,263	1,295,111	1,338,570	1,139,083	787,193	524,864	391,127	329,546	353,657	362,363	518,071	763,823	8,742,672
	924,210	1,215,129	1,166,126	1,077,030	736,623	500,415	428,625	350,259	361,273	414,015	495,768	642,366	

Total Net Recovery	**$45,780.06**	**/**	**8,742,672**	**=**	**$0.005**	**/ Mcf**
					$0.0005	**/ Ccf**

	Projected Dec-19	Projected Jan-20	Projected Feb-20	Projected Mar-20	Projected Apr-20	Projected May-20	Projected Jun-20	Projected Jul-20	Projected Aug-20	Projected Sep-20	Projected Oct-20	Projected Nov-20	Total
	939,263	1,295,111	1,338,570	1,139,083	787,193	524,864	391,127	329,546	353,657	362,363	518,071	763,823	8,742,672
	$0.005	$0.005	$0.005	$0.005	$0.005	$0.005	$0.005	$0.005	$0.005	$0.005	$0.005	$0.005	$0.063
Recovery @ $0.004 per Mcf	$4,918.35	$6,781.71	$7,009.27	$5,964.68	$4,122.05	$2,748.39	$2,048.09	$1,725.63	$1,851.89	$1,897.47	$2,712.82	$3,999.68	$45,780.03
Recovery Net of PSC Assess	$4,903.59	$6,761.36	$6,988.24	$5,946.79	$4,109.68	$2,740.14	$2,041.95	$1,720.45	$1,846.33	$1,891.78	$2,704.68	$3,987.68	$45,642.67
PSC Assessment	$14.76	$20.35	$21.03	$17.89	$12.37	$8.25	$6.14	$5.18	$5.56	$5.69	$8.14	$12.00	$137.36
	$4,918.35	$6,781.71	$7,009.27	$5,964.68	$4,122.05	$2,748.39	$2,048.09	$1,725.63	$1,851.89	$1,897.47	$2,712.82	$3,999.68	$45,780.03

EXHIBIT 1

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
& ENVIRONMENTAL CONTROL
DIVISION OF WASTE AND HAZARDOUS SUBSTANCES
391 LUKENS DRIVE
NEW CASTLE, DELAWARE 19720-2774

SITE INVESTIGATION &
RESTORATION SECTION

TELEPHONE: (302) 395 - 2600
FAX NO.: (302) 395 – 2601

December 5, 2013

Mr. Josh Denham
Chesapeake Utilities Corporation
909 Silver Lake Boulevard
Dover, DE 199904

RE: Request for Permission to Perform Soil & Groundwater Sampling
Seaford Town Gas Site (DE-0061)
Sussex County Tax Parcel # 5-31-13.00-0006.00

Dear Mr. Denham:

The purpose of this letter is to inform you that the State of Delaware, Department of Natural Resources and Environmental Control Site Investigation and Restoration Section (DNREC-SIRS) will be conducting a facility evaluation (FE) of the Seaford Town Gas Site (DE-0061).

The Seaford Town Gas Site was subject to a Preliminary Assessment by DNREC in March 1984 and was granted a No Further Action Tentative Desposition by the Environmental Protection Agency (EPA) in 1985.

The purpose of this facility evaluation is to determine if a release of hazardous substances has occurred at the site. The FE costs will be funded by the Hazardous Substance Act Cleanup Fund (HSCA Fund).

In order to conduct this investigation, DNREC-SIRS is requesting your permission to access to the property, which is listed as Sussex County Tax Parcel #5-31-13.00-0006.00 for the purpose of collecting soil, and groundwater samples.

The collection of soil and/or groundwater samples will involve intrusive activities which require holes of up to four (4) inches in diameter to be bored into the subsurface up to a depth of approximately 20 feet. DNREC-SIRS will also need to install groundwater monitor well(s) and/or possibly remove contaminated soils and perform any other remedial actions as deemed necessary to protect public health and the environment. DNREC-SIRS assures you that the property will be restored to its original condition prior to the investigatory activities.

DNREC-SIRS has prepared and included with this letter for your convenience a "Access Agreement" for soil and/or groundwater sampling of your property in order to assist in our

investigatory efforts. **Upon your review and concurrence with the terms of the enclosed agreement, DNREC-SIRS requests that you sign, date and return it to DNREC-SIRS in the enclosed envelope as soon as possible.** Be advised that due to the necessity of the upcoming investigation and in accordance with 7 Del. C. § 9106. Investigation and Access, DNREC-SIRS "may enter, at reasonable times, upon any real property, public or private, to conduct sampling, inspection, examination, and investigation evaluating the release or imminent threat of release to determine the need for a remedy or to execute the remedy upon given verbal notice, and after presenting official identification to the owner or operator."

DNREC-SIRS would like to thank you in advance for your permission to access your property to complete this important environmental investigation.

Please contact me at (302) 395-2600 at your earliest convenience if you have any questions regarding the information contained in this letter or the attached access agreement.

Sincerely,

Robert C. Asreen, Jr.

Robert C. Asreen, Jr.
Project Officer

RCA:tlw
RCA13121.doc
DE 0061 II H 1

Enclosure: Exhibit A Seaford Town Gas Facility Evaluation Work Plan FINAL

pc: Timothy Ratsep, Environmental Program Manager
Paul Will, Program Manager I

SITE ACCESS AGREEMENT

The State of Delaware, Department of Natural Resources and Environmental Control, Site Investigation and Restoration Section ("DNREC-SIRS") is performing a Facility Evaluation ("FE") for the Seaford Town Gas Site (the "Site" or "Property"). The Site encompasses approximately 0.79 acres and is made up of Sussex County Tax Parcel #5-31-13.00-0006.00.

The Chesapeake Utilities Corporation ("Owner") currently owns the Site, which is located at 0 SSE. Budd Street in Seaford.

DNREC-SIRS desires permission from the Chesapeake Utilities Corporation to allow access to the Property for the purpose of implementing a Facility Evaluation ("FE") at the Site, as described in the Seaford Gas Site Facility Evaluation Work Plan FINAL, Inc., dated November, 2013 ("Work Plan"), attached as Exhibit A. The Owner has been provided with a copy of the Work Plan and has had an opportunity to review it and discuss it with any person he may deem appropriate.

DNREC-SIRS will arrange with Miss Utility to mark all underground lines and structures within their jurisdiction or control to be present on the Property.

Based on the above request, it is hereby agreed as follows:

1. The Owner/Resident grants DNREC-SIRS and its contractor, Tetra Tech, Inc. and their agents and employees (collectively the "Parties"), permission to enter the Property for the purpose of implementing the Facility Evaluation Work Plan. This permission begins on January 2, 2014 and will remain in effect for such period of time until the Final Plan of Remedial Action for the Property is implemented.

2. The Owners shall identify by markout all underground lines or structures on the Property, which are not part of the Miss Utility identification surveys.

3. If the lines or structures the Owners are to mark, exclusive of the lines or structures Miss Utility is to mark, are incorrectly marked and a breach in the line or damage to underground structures occurs as a consequence of the implementation of the Work Plan, the Parties will not be responsible for any resulting damage.

4. DNREC-SIRS will provide Owner/Resident at least 48 hours advance notice before the parties arrive on the Property to conduct activities pursuant to the FE Work Plan.

5. Following completion of the Facility Evaluation, as set out in the FE Work Plan, DNREC-SIRS agrees to return the Property to substantially the same condition as it was immediately prior to the commencement of work.

Department of Natural Resources and
Environmental Control

12/5/2013
Date

Timothy T. Ratsep
Environmental Program Administrator

Owner

_____
Date

By: _____

Title: _____

SITE ACCESS AGREEMENT

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Department of Natural Resources and
Environmental Control

12/5/2013
Date

Timothy T. Ratsep
Environmental Program Administrator

Owner

_____
Date

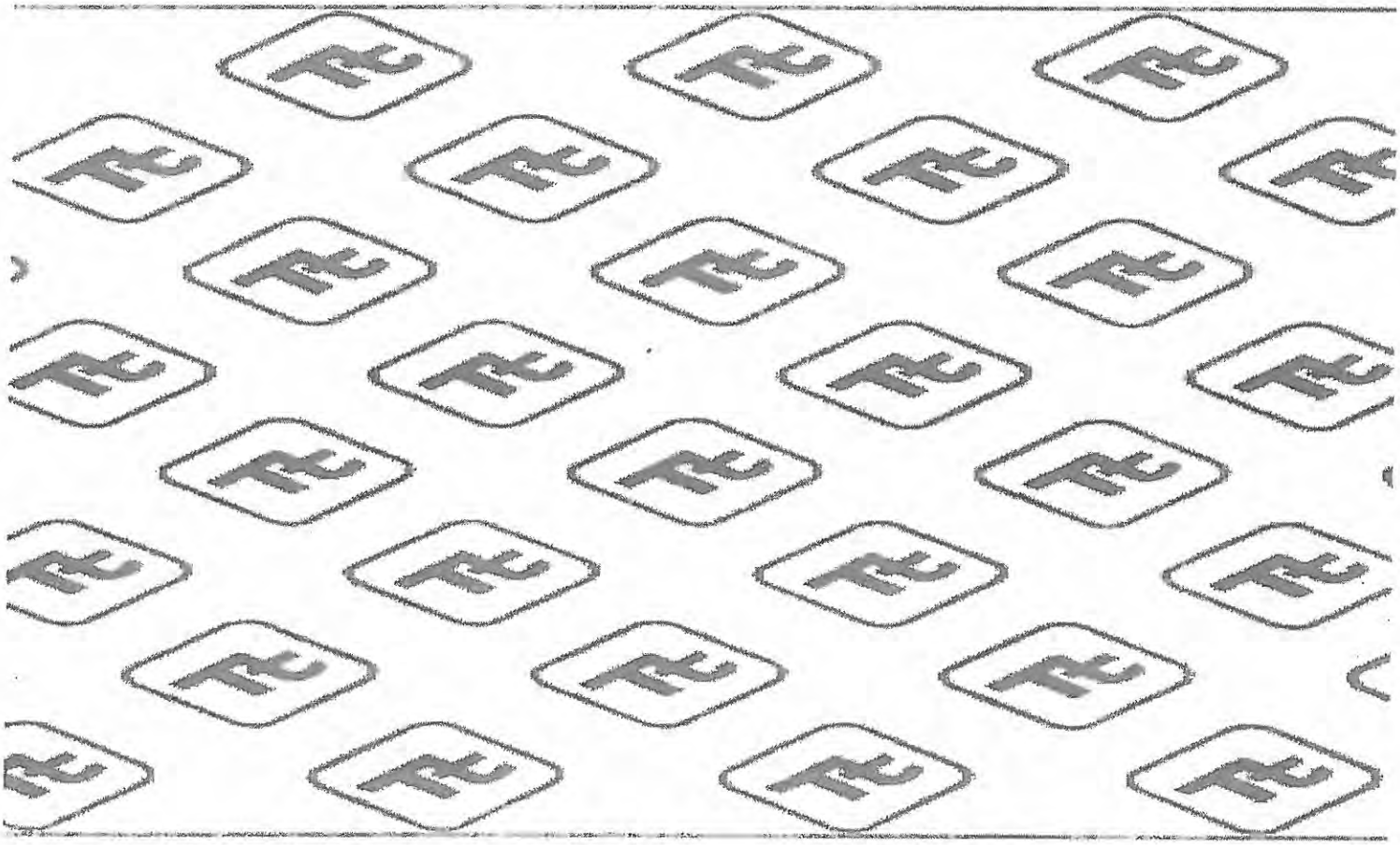
By: _____

Title: _____

EXHIBIT 1

TETRA TECH

Seaford Gas Site Facility Evaluation Work Plan (FINAL)



Prepared for:

Site Investigation & Restoration Section
Division of Waste & Hazardous Substances
Dept. of Natural Resources & Environmental Control
391 Lukens Drive, New Castle, DE 19720

Project No. 103S257406

November 2013

TABLE OF CONTENTS

Figures:

1.0 INTRODUCTION

Tetra Tech, Inc. (Tetra Tech) is pleased to provide this work plan to the Delaware Department of Natural Resources and Environmental Control (DNREC) Site Investigation and Restoration Section (SIRS) for the investigation of the Seaford Gas Company Site located in Seaford, Delaware 19973, located on Shipley Street at coordinates 38.63589°, -75.61965° (**Figure 1**). The Seaford Gas site is a former coal manufactured gas plant (MGP) site. The Environmental Protection Agency (EPA) inspected the site in May of 1985 and made a determination that no further action was necessary. This determination was based upon upon information provided by employees of Chesapeake Utilities—that no waste was disposed of on site and that the generated waste waste/byproduct was sold to roofers. No other known environmental investigation related activities have been documented for the site.

The purpose of this work plan is to more fully investigate/evaluate environmental conditions at the site and determine whether further investigation is required, or whether a conditional No Further Action determination can be made by DNREC.

The Scope of Work (SOW) will comprise of the following tasks:

- Conduct a review of existing project file records, project planning and coordination.
- Implement the proposed field related activities.
- Prepare a Facility Evaluation Report.
- Provide project management including preparation of a timeline of deliverable and related administrative tasks (progress reports, invoicing).

1.1 Project Planning and Coordination

Tetra Tech will conduct project planning activities to support this SOW; these activities will include the following:

- Prepare a Site Health and Safety Plan (HASP) for the field activities. The HASP shall include procedures and contact information for safely conducting the fieldwork.

- Prepare a Sampling and Analysis Plan (SAP). The SAP will establish the appropriate Data Quality Objectives (DQO) and the benchmarks to ensure that they are attained.

- Develop a schedule to implement the work plan and other associated tasks.

2.0 IMPLEMENT PROPOSED FIELD RELATED ACTIVITIES

As part of the investigation, Tetra Tech will provide oversight for soil boring installation and construction of monitor wells. Based upon our understanding of the local geology, Tetra Tech anticipates a heavy-duty Geoprobe should have sufficient power to install the borings and monitor wells. The field investigation activities are detailed in the following sections. DNREC-SIRS Standard Operating Procedures for soil and groundwater sampling will be followed during the investigation process.

2.1 Soil Borings

- Prior to drilling at the site, Tetra Tech will obtain utility clearance through the "Call Before You Dig" system.
- Given the approximately 0.90-acre footprint of the site, Tetra Tech proposes to install up to 12 soil borings as part of the investigation. Based on actual field conditions, this number of borings may vary (with DNREC concurrence). Soil borings will be advanced through the vadose (unsaturated) zone into the top of the saturated zone except at those locations where a well is to be installed in the boring in which case the boring will be advanced through the saturated zone so that the screened interval stadles the water table. The proposed locations are depicted on **Figures 2 and 3,** but will be finalized in consultation with DNREC.
- Subsurface soil samples will be collected in 4- or 5-foot disposable acetate sleeves using direct push (GeoProbe) equipment. Soils will be continuously screened using a photoionization detector (PID) and visually inspected for the presence of potential environmental contamination (based upon color, odor and any visible staining).
- One soil sample will be collected from the shallow subsurface surface (0-2 ft. bgs) and one from the water table interface at each location; these samples will be submitted for laboratory analyses.
- All soil samples will be initially submitted to the DNREC screening laboratory for the screening analysis for VOCs, SVOCs, Pesticides/PCBs and Total Metals. Based upon the findings of the screening analysis, DNREC and Tetra Tech will select the appropriate samples for fixed laboratory analysis for TAL/TCL analysis. A copy of the Sampling and Analysis Plan (SAP) is provided as an Attachment to this work plan.
- Any residual soil from the soil boring activities will be placed back into the borehole. If all of the soil cannot be placed back into the borehole, then it will either be containerized into 55-gallon drums for disposal or, with DNREC approval, will be spread on site.

2.2 Monitor Well Installation

Tetra Tech will provide oversight for the installation of the monitor wells in order to collect groundwater samples and to obtain site specific hydrogeolical data (groundwater flow direction, gradient, etc.). The anticipated well construction related activities are summarized below.

- Tetra Tech will provide oversight for the installation of up to 4 monitor wells on site to evaluate groundwater flow patterns and to obtain an initial groundwater quality baseline. These wells will be located in consultation with DNREC.
- The depth to groundwater in soils in the area is unknown; however, the site elevation is approximately 20 feet above mean sea level. Based upon this assumption, the expected depth of each well will range from 15 to 20 ft. bgs.
- Monitor wells will be constructed of 1-inch diameter polyvinyl chloride (PVC), with pre-packed 10-slot (0.010) PVC screen installed to a depth to intersect the top of the water table. The maximum screen length will be 10 feet. Wells will be completed as a flush-mount style with protective casing.
- After the monitor wells are installed, they will be developed/purged using a peristaltic pump or by other approved methods. The purging process will be continued until the purge water is relatively clear. Field parameters such as pH, specific conductivity, and temperature will be measured and results recorded.
- Approximately 48-72 hours after the wells are purged, Tetra Tech will sample the wells by low flow methods for analyses of TCL/TAL VOC, SVOCs, Pesticides/PCBs and Total/Dissolved Metals by the lab (See Section 2.3).
- Minimal investigation derived waste (IDW) is expected to be generated because of the low flow sampling methodology. Any residual development and purge water from sampling activities will be containerized into 55-gallon drums for disposal. Alternatively, if site conditions allow for on-site disposal with DNREC approval, then this method will be considered.
- Tetra Tech will initially record the horizontal coordinates of each monitor well to an accuracy of approximately 3 meters using Global Positioning System (GPS). The relative elevation (based on arbitrary datum) of the monitor wells and the water table will be determined using standard instrument survey techniques. All new survey data will be incorporated into the existing base survey coordinate system.

Assumptions

The following assumptions apply to this subtask:

- Tetra Tech assumes 2 field personnel will be mobilized from the Newark, Delaware office to oversee the soil boring installation and well construction, and well development.
- The Tetra Tech Field Operations Leader (FOL) and equipment manager will coordinate the procurement of all equipment and supplies needed for the drilling and well installation.
- For cost estimating purposes, Tetra Tech assumes approximately 8 soil samples will be submitted for fixed laboratory analyses [{(12 soil borings x 2 soil samples per boring) x 25%} + 2 quality control samples].
- Tetra Tech anticipates 3 to 4 calendar days to implement the soil boring and well installation activities. This time includes mobilization for driller and Tetra Tech, utilities clearance, advancing the borings, soil sampling, well installation, well development, IDW management, and demobilization activities. Tetra Tech assumes 2 Tetra Tech field personnel will oversee the work.
- Tetra Tech assumes 4 drums of drilling and well installation related IDW (residual soils [2], development water and decontamination fluids [2]) will be generated. All IDW is assumed to be non-hazardous for the purpose of estimating costs.
- One Tetra Tech project coordination meeting is assumed at the beginning of the field sampling program to discuss the scope of the investigation with field team members, initiate procurement of equipment and supplies for the field work, and obtain information for security and health and safety clearances. This meeting is assumed to be one hour in duration involving the project manager, project technical lead, project chemist, health and safety representative, field operations leader (FOL), field sampling staff, and equipment manager.

2.3 Groundwater Sampling

Tetra Tech will perform groundwater sampling for the newly installed monitor wells. In general, the well sampling work will include the following related tasks:

- Tetra Tech will conduct groundwater sampling approximately 48-72 hours after development of the new monitor wells in order to allow the wells to equilibrate with the local hydrogeologic conditions.
- Prior to sampling Tetra Tech will perform a synoptic round of groundwater level measurements from the monitor wells.
- The monitor wells will then be purged using either peristaltic or submersible pumps attached to Teflon-lined tubing (depending on the available water column head). Dedicated sample tubing will

be installed into each new well during the first event so that it may be re-used for future sampling events.

- Groundwater samples will be collected from each of the wells using low-flow sampling techniques.
- Groundwater samples will be collected and submitted to the analytical lab for analyses of TCL/TAL VOC, SVOCs, Pesticides/PCBs and Total/Dissolved Metals.
- Tetra Tech will containerize all IDW generated during groundwater sampling into 55-gallon drums and procure a subcontractor to characterize and dispose of IDW after sampling. Alternatively, if site conditions allow for on-site disposal with DNREC approval, then this method will be considered.
- A copy of the Sampling and Analysis Plan (SAP) is provided as an Attachment to this work plan.

Assumptions

The following assumptions are implicit in the Tetra Tech budget estimate for this subtask:

- Costs developed for this work plan reflect one round of groundwater sampling at the site.
- The Tetra Tech FOL and equipment manager will coordinate the procurement of all sampling equipment and supplies for each sampling event.
- For cost estimating purposes, Tetra Tech assumes 6 groundwater samples will be submitted for laboratory analyses (4 well samples plus 2 quality control samples).
- Tetra Tech anticipates 1 day to conduct groundwater sampling. This time includes mobilization, groundwater level measurements, groundwater water sampling activities, and demobilization. Tetra Tech assumes 2 field personnel will conduct the work.
- Tetra Tech assumes 1 drum of liquid IDW (purge water and decontamination fluids) will be generated as part of the groundwater sampling event. All IDW is assumed to be non-hazardous for the purpose of estimating costs.

3.0 REPORTING

Tetra Tech will prepare a Facility Evaluation Report as part of this scope. The report will consist of the following components:

- An introduction with a description stating the purpose, objective and scope of the investigations.
- A brief narrative summary of the environmental setting and current and historical environmental conditions, any previous environmental work conducted, and the current regulatory status.

- A summary of the work completed during the investigation, including the rationale for the density, frequency, locations, and depths of sampling; field procedures and any deviations from the proposed sampling plan; analytical methods; details of field screening and instrument calibration; and any relevant QA/QC issues that may affect data quality and data usability, based on the data quality assessment and data usability evaluation performed in accordance with procedures described in the QA/QC guidance document.
- A tabular summary of the current and historical soil and groundwater analytical data. This data will be compared against the newly promulgated DNREC-SIRS screening levels(January 2013).
- A findings section that will include any updates to the site geology and hydrogeology (based upon the field investigation findings) and, if appropriate, further refine the spatial distribution and temporal variations in concentrations of any identified COCs for each media of concern.
- A conclusions section that will include an interpretation of the findings, an assessment of the environmental implications if impacted soil or groundwater is encountered, and the rationale used to arrive at the conclusions.
- Any recommendations for any additional investigation if warranted.
- Appendices, including soil boring logs, geologic cross-sections, well construction logs, well permits, groundwater level measurement forms, groundwater contour maps, low-flow sample collection log sheets, laboratory chain-of-custody forms, and full laboratory reports.

Deliverables:

The deliverables associated with this scope will include a draft and final version of the report. All comments will be incorporated into the final report, but no separate written response to comments will be prepared. Submittals will be provided as follows:

DRAFT documents:

- 1 bound copy, text printed double-sided with "DRAFT" clearly marked on the cover
- 1 electronic version (CD or e-mail attachment to Project Officer)

FINAL documents:

- 1 unbound copy, text printed double-sided, including a cover letter with brief responses to all comments offered by DNREC-SIRS on the draft document
- 1 electronic version on CD

4.0 PROJECT MANAGEMENT

This task includes the level of effort necessary for the Tetra Tech Project Manager to perform resource planning, direct project staff and subcontractors, perform routine communications with DNREC, and conduct other project management duties (monthly progress reports, phone calls, teleconferences, meetings, and invoicing) associated with the scope of work.

FIGURES

EXHIBIT 1

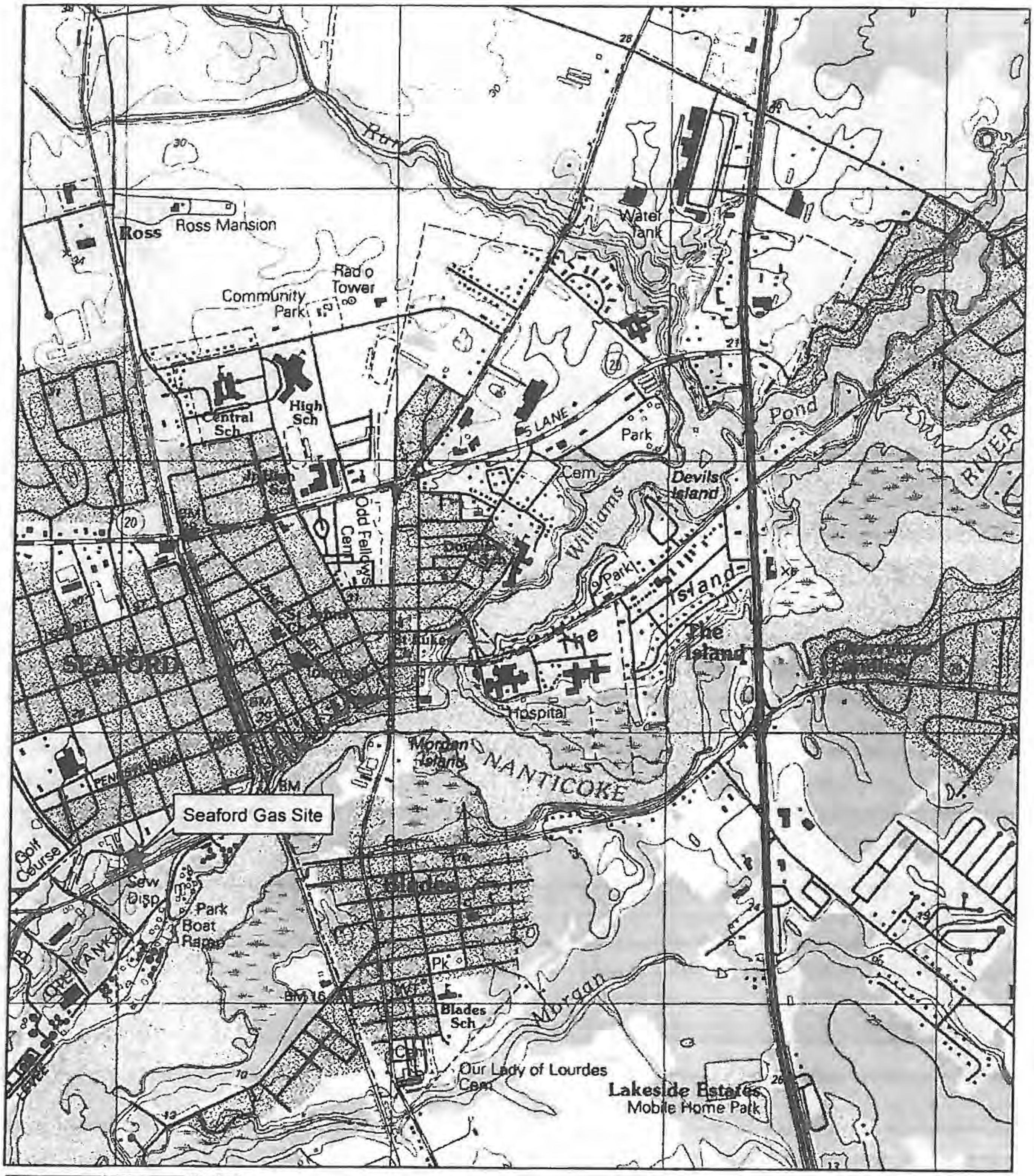
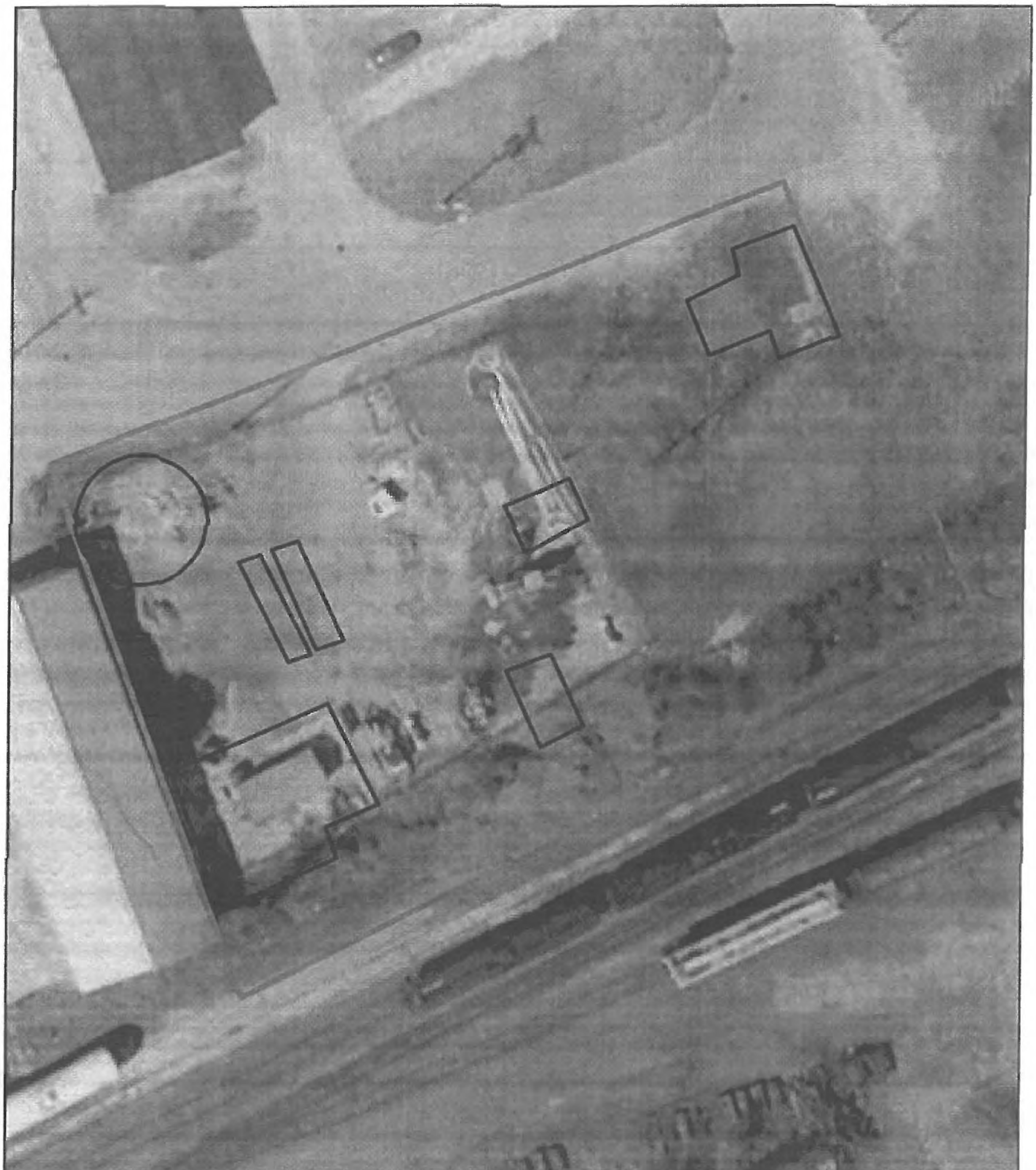


Figure 1
Site Location Map
Seaford Gas Site
Seaford, Sussex Co., DE

Tetra Tech
240 Continental Drive, Suite 200
Newark, DE 19713
Phone: (302) 738-7551
Toll Free: (800) 462-0910
www.tetratech.com

EXHIBIT 1



Legend

- Approximate Historical Structure Locations
- Approximate Property Boundary

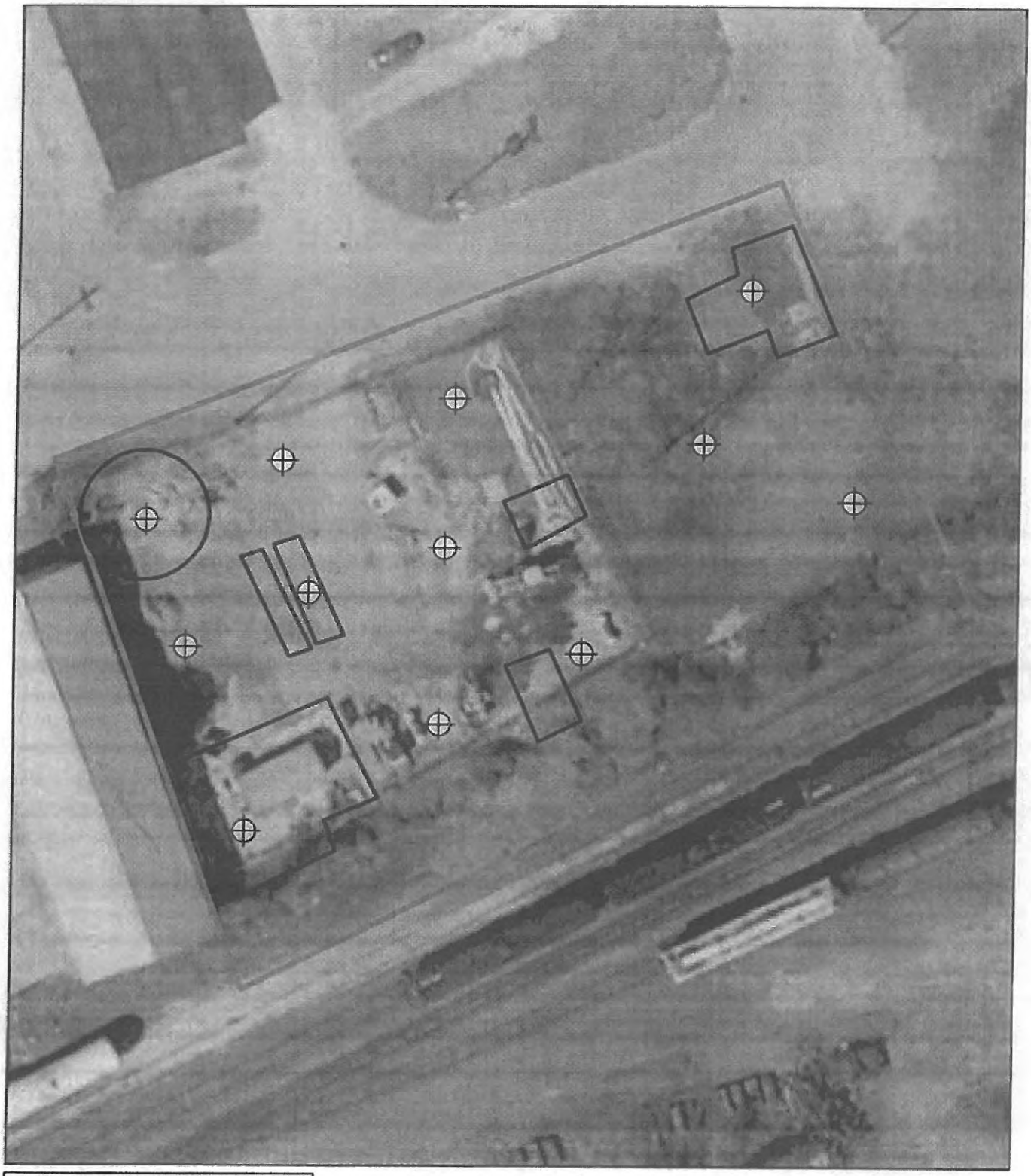
0 5 10 20 30 40 Feet

1 inch = 40 feet

Figure 2
Site Map
Seaford Gas Site
Seaford, Sussex Co., DE

Tetra Tech
240 Continental Drive, Suite 200
Newark, DE 19713
Phone: (302) 738-7551
Toll Free: (800) 462-0910
www.tetratech.com

EXHIBIT 1



Legend

- Approximate Historical Structure Locations
- Approximate Property Boundary
- Proposed Boring Locations

Feet
0 5 10 20 30 40

1 inch = 40 feet

Figure 3
Proposed Boring Locations
Seaford Gas Site
Seaford, Sussex Co., DE

Tetra Tech
240 Continental Drive, Suite 200
Newark, DE 19713
Phone: (302) 738-7551
Toll Free: (800) 462-0910
www.tetratech.com

S:\03-Projects\State & Local\DE-DNREC\103527\03 Seaford Gas\Figures\Figure 3- Proposed Boring Locations Map.mxd

EXHIBIT 1

ATTACHMENT
SAMPLING & ANALYSIS PLAN

Proposed Sampling and Analyses Plan for Seaford Gas Site (DE-0061)

1.0 Proposed Sampling and Analyses Plan Table

Sampling Matrix	Locations, depths and number of Samples	Sample Collection Methodology	DNREC-SIRB Lab Screening/Other Screening	HSCA Laboratory Analysis	Comments/Justification
Subsurface Soil	12 Locations up to 2 per location (total of 24 samples)	SIRB_SOP_Subsurface Soil_Sampling	TCL/TAL VOC, SVOCs, Pesticides/PCBs and Total/Dissolved Metals	To be determined based upon screening results	Samples to be collected by Geoprobe
Groundwater	4 Wells	SIRB_SOP_Groundwater _Sampling	TCL/TAL VOC, SVOCs, Pesticides/PCBs and Total/Dissolved Metals	To be determined based upon screening results	Samples to be collected by low-flow sampling methods using a peristaltic pump
Soil gas (vapor intrusion related)	N/A	SIRB_SOP_Soilgas_Sampling	N/A	N/A	No soil gas sampling scoped at this time.
Sediment	N/A	SIRB_SOP_Sediment_Sampling	N/A	N/A	No sediment sampling scoped at this time.
Surface Water	N/A	SIRB_SOP_Surface Water_Sampling	N/A		No surface water sampling scoped at this time.

Other Survey (geophysical, etc)	N/A	Industry Standard Procedure for the Survey proposed			
QA/QC Samples – Fixed Lab Analysis					
Media	**No. Samples** *(Planned)*	**Quality Control (QC) Sample**	**Analytical Group**		**Frequency**
Groundwater	1	Field Duplicate	VOCs		1 per 20 samples
	1	MS/MSD	VOCs		1 per 20 samples
Soil	1	Field Duplicate	VOCs		1 per 20 samples
	1	MS/MSD	VOCs		1 per 20 samples
Other	TBD	Trip Blank	VOCs		One per cooler containing VOCs.

2.0 Proposed Sampling Location Map(s)

(See Attached Figure 3)

3.0 Investigation Derived Waste Management

Overview

This waste management plan addresses the management for wastes generated during implementation of the field investigation activities at the Seaford Gas site. Since it is anticipated that waste generated from these activities will be non-hazardous, the procedures and practices in this plan address management and disposal of non-hazardous waste. While many of these procedures and practices are also applicable to hazardous waste, this plan will be modified to include hazardous waste requirements in the event that hazardous waste is generated.

It is anticipated that the following investigation derived waste (IDW) will be generated during these activities:

- Approximately two 55-gallon drums of residual soil from boring activities.
- Approximately one 55-gallon drums of debris containing personnel protective equipment (PPE) related materials such as disposable gloves, plastic sheeting, decontamination water, and disposable sampling supplies such as acetate soil sleeves.
- Approximately one 55-gallon drums of water generated during the low-flow sampling groundwater activities, as well as any residual decontamination fluids generated during the field work.

Management of Waste/Media during Soil Boring and Groundwater Sampling

During the soil boring activities, soil samples will be collected by direct push methods (e.g., "Geoprobe") using disposable acetate sleeves. Soil will be removed from each sleeve in order to classify the soil and collect samples for laboratory analysis. The remaining residual soil from each acetate sleeve will be staged on polyethylene sheeting next to the borehole until drilling has been completed at that location. At the completion of drilling, the residual soils will be placed back down the borehole (to the extent practicable). Any residual material that cannot be returned into the

hole will be placed into DOT-compliant 55-gallon steel drums and staged for future characterization and disposition. The spent acetate sleeves will be placed into heavy duty plastic contractor bags and disposed of as municipal trash. The use of direct push methods for collecting soil samples low-flow groundwater sampling methods is intended to minimize waste generation.

During the groundwater sampling, residual purge water from the low flow sampling will be initially discharged into 5-gallon plastic buckets with lids. Once sampling is complete at each well, the residual purge water will be transferred to a 55-gallon steel drum for future characterization and disposition. All drums will be labeled with a description of the waste, origin of the contents (boring or well location) and date of generation. All of the drums will be staged at a location to be designated by DNREC personnel until they can be sampled for waste characterization purposes and final disposition.

4.0 Health and Safety Plan

(See Attached)

TIPS FOR THE LEVEL 2 HEALTH AND SAFETY PLAN (HASP)

This page presents tips for word processing the Level 2 HASP form. This page is not part of the HASP. The *boilerplate* text of the form should never be changed and is issued in read-only format. After revising the form, save the revised document under a new name. **Save your work frequently.**

WARNING: Work slowly and carefully. Print this page out now so you have the following instructions while you work on the form. Delete this page when you are finished working on the HASP form.

- ✓ RED text contains instructions or sample text only. **Red text should be deleted and formatted in black throughout the document after information is added.**
- ✓ Double-click or right-click on any box and then select the "checked" option to enter an X. The boxes are set up to center the text both horizontally and vertically.
- ✓ Most of this document is set up in table format. A table row may be preset to a specific size, and not all text within the row will be displayed. When not all text is displayed, place the cursor in the row in question.

Additional Comments:

- ✓ HASPs should be submitted to your Regional Safety Officer (RSO) or by emailing to EMI.HaspApprovers.com for review and approval prior to the start of operations.
- ✓ Ensure that all subcontractors have been pre-qualified prior to submission for HASP approval. If you are unsure a subcontractor is currently pre-qualified, please visit the health and safety website at: http://home.ttemi.com/High%20Hazard%20Subcontractor%20Docu/default.aspx.
- ✓ Subcontractor and persons from other organizations that will be following this HASP must be identified by name where applicable and sign the Approval and Sign-off Form.
- ✓ This HASP may be completed electronically or by hand, as necessary to ensure that a complete HASP is available to support the project.
- ✓ All blanks should be filled in with appropriate information or marked as not applicable (NA)
- ✓ Mark all applicable items with an X in the box in sections that contain lists and boxes to check.
- ✓ **The HASP must be reviewed and approved before any work can begin on site**. After the initial project work, data and subsequent decisions related to health and safety may be recorded in the field log book.
- ✓ An amendment is required when changes that were not within contingency plans are made or a new task is added to Tetra Tech's scope of work. A signature by a HASP approver is also required for amendments.
- ✓ An approved copy of the HASP must be kept on jobsites at all times Tetra Tech personnel are present. **Failure to have an approved HASP on site at all times will lead to disciplinary actions.**
- ✓ The HASP located on the jobsite must contain signatures from each person entering the jobsite signifying review and acceptance of the plan.
- ✓ Personnel who prepare an HASP must be familiar with the requirements stated in the *START Health and Safety Plan Approval Procedures* document, dated September 19, 2001.

Rights and Responsibilities

- ✓ All personnel working on Tetra Tech projects are expected to and responsible for reporting safety hazards they face while performing their work. As such, reports of safety hazards are viewed as positive interactions and no employee of Tetra Tech EMI will retaliate against anyone who reports a safety hazard.
- ✓ Tetra Tech employees have the right to refuse to perform work involving significant safety hazards they feel have not been addressed.
- ✓ All personnel working on Tetra Tech projects have the right to stop work if they feel any worksite condition, practice, or operation causes or presents a hazard that can reasonably be expected to result in immediate death, serious physical harm, or severe damage to the environment.

Attachments to the HASP

- ✓ Daily Tailgate Safety Meeting form (to be completed at the beginning of each day and stored with the HASP onsite)
- ✓ OSHA VPP Info sheet for review on jobsites
- ✓ HASP Amendment Form (to be completed when new tasks are added to Tetra Tech's scope of work, an existing HASP changes substantially, or new hazards are encountered on the jobsite)
- ✓ Form AF-1 (Field Audit Checklist to be completed once per week onsite and submitted to your Regional Safety Officer)
- ✓ Activity Hazard Analysis (AHA) template

TETRA TECH

LEVEL 2 HEALTH AND SAFETY PLAN

Site Name: Seaford Gas Co. Site (DE-0061)	**Site Contact: Dave Kane**	**Telephone: (302) 283-2251**
Location: S. Shipley Street, Seaford, DE 19973	**Client Contact: Bob Asreen (DNREC)**	**Telephone: (302) 395-2600**
EPA ID No. DE-0061	**Prepared By: Jacob Costello**	**Date Prepared: 10/18/2013**
Project No. 103S257406	**Dates of Activities: 10/31/2013-10/31/2014** (HASP is not valid for periods longer than 12 months)	**Emergency Response** ☐ Yes ☒ No

Objectives:

Peform the following field investigation at the Seaford Gas site:

1. Conduct groundwater sampling from monitor wells (to be installed).
2. Collect soil samples from undisturbed areas

Site Type: *Check as many as applicable.*

☐ Active	☐ Landfill	☐ Inner-City
☒ Inactive	☐ Railroad	☒ Rural
☒ Secured	☐ Residential	☐ Remote
☐ Unsecured	☒ Industrial	☐ Other (*specify*)

Project Scope of Work and Site Background

The Seaford Gas Site is listed on the contaminated sites at the Department of Natural Resources and Environmental Control – Site Investigation and Restoration Branch (DNREC-SIRB). The Seaford Gas Site is located within the town of Seaford, Delaware.

The Site is located on the west side of S. Shipley Street and south of Harrington Street and consists of approximately 0.90 acre in industrial lands, bordered to the north by industrial park and to the south by a railroad line. The property is south of residential housing lots. Historically, the site was reportedly used as a coal gas plant. No wastes were known to be disposed of on site and in the mid-1980's, the site was listed as a no action recommended site by the EPA. No work has been conducted at the site since that time.

Tetra Tech anticipates the field activities for the field investigation to include the following activities:

1. Site Mobilization/Demobilization
2. Install soil borings/monitoring wells
3. Collect soil and groundwater samples
4. Investigation Derived Waste (IDW) Management
5. Decontamination

The following table shows a summary of field activities for the current project objectives.

SUMMARY OF FIELD INVESTIGATION ACTIVITIES AT SEAFORD GAS

Proposed Activity	Purpose	Proposed Sampling Activities
Perform site setup activities	Support field investigation activities	• Coordinate sample activity with property owner and contractors present on site. • Research previous Field Activities to determine extent of sampling.
Groundwater Sampling	To evaluate the presence of contaminates in groundwater. The data will be used to develop the No Further Action Report, if possible.	• Install and develop Monitor wells on site. • Collect groundwater samples using pump • Analyze samples for VOCs, SVOCs, and Metals
Soil Sampling	To evaluate the presence of contaminates in soil.	• Collect soil samples by Geoprobe methods to a depth of 15 to 20 ft. below grade
		•

Health and Safety Approver Comments or Additional Instructions: Ensure that the entire area has been adequately surveyed and marked for ALL utilities and that no intrusive work is conducted within the margin of error of the survey. ONLY subcontractors (i.e. drilling) that have been pre-approved by Tetra Tech and (if required) the client may be utilized. Further, subcontractors MUST complete their own HASP and provide JSA/AHAs for EACH of their assigned tasks.

Health and Safety Plan Approver Signature: **Date:**

Note: A minimum of two persons with appropriate training and medical surveillance must be on site for any fieldwork subject to Level 2 HASP requirements.
Note: A detailed site sketch or figure may be included on Page 10 of 12.

TETRA TECH

LEVEL 2 HEALTH AND SAFETY PLAN

Initial Isolation and Protective Action Distances (for emergency response operations only): NA

Initial Isolation Distance: This zone should extend in all directions; 660 feet for unknown hazards and 0.5 mile for tanker truck or rail car incidents.
NOTE: Keep a maximum distance away for unknown sites until the identity of the materials is determined.

Subsequent Isolation and Protection Action Zones Based on Air Monitoring Results:
NOTE: Distance at sites with unknown hazards should be increased, if necessary, based on air monitoring results.

Wind Speed and Direction (Approach from upwind)		Temperature (°F)	Relative Humidity (%)	Probability of Precipitation (%)	Weather Forecast (such as partly cloudy, snow, etc.)
Speed (mph):	**From Direction:**	varies	varies	varies	varies

On-Site Supplies: ☒ First Aid Kit ☒ Fire Extinguisher ☐ Air Horn ☐ Oral Thermometer ☐ Noise Dosimeter

Known or Anticipated Site Hazards or Concerns: (Hazards covered by existing Safe Work Practices are listed on the next page)

☐ Work on active roadway	☒ Overhead utilities	☐ Energized electrical systems
☐ Onsite laboratory	☒ Buried Utilities	☒ Portable hand tool use
☐ Explosion or fire hazard	☐ Surface or underground storage tanks	☐ Portable electrical tool use
☐ Oxygen deficiency	☒ General slips, trips, falls	☐ Machine guarding
☒ Unknown or poorly characterized chemical hazards	☒ Uneven, muddy, rugged terrain	☒ Portable fire extinguisher use
☒ Inorganic chemicals	☐ Lift (man lift, cherry picker) use	☒ Driving commercial vehicles
☒ Organic chemicals	☐ Industrial truck (forklift) use	☒ Driving personal vehicles
☐ Chemical warfare materiel	☐ Wood or metal ladder use	☐ Scientific diving operations
☐ Compressed Gas Cylinders	☐ Dangerous goods shipped by air	☐ Injury and Illness Prevention Program (California only)
☐ Asbestos	☐ Elevated work (over 6' high)	☐ Ergonomics (California only)
☐ Respirable particulates	☐ Heavy equipment use or operation	☐ Work in strip or shaft mines
☐ Respirable silica	☐ Construction work	☐ Client-specific safety requirements (attach to HASP)
☐ Blasting and explosives	☐ Excavation or trenching	☐ ATV use
☐ Non-ionizing radiation (lasers, radiofrequencies, UV)	☐ Benching, shoring, bracing	☐ Methamphetamine lab
☐ Ionizing radiation (alpha, beta, gamma, etc.)	☐ Scaffold use	☐ Working over or near water
☒ Heat stress	☐ High noise	☐ Mold
☒ Cold stress	☐ Grinding operations	☒ *Other (insert) Insect Bites, Stings, etc*

Explosion or Fire Potential: ☐ High ☐ Medium ☐ Low ☒ Unknown

TETRA TECH

LEVEL 2 HEALTH AND SAFETY PLAN

Chemical Products Tetra Tech EM Inc. Will Use or Store On Site: (Attach a Material Safety Data Sheet [MSDS] for each item.)

☒ Alconox or Liquinox	☐ Calibration gas (Methane)	☐ Hydrogen gas	☐ Isopropyl alcohol
☒ Hydrochloric acid (HCl)	☐ Calibration gas (Isobutylene)	☐ Household bleach (NaOCl)	☐ HazCat Kit
☐ Nitric acid (HNO_3)	☐ Calibration gas (Pentane)	☐ Sulfuric acid (H_2SO_4)	☒ Eyewash (potable water)
☐ Sodium hydroxide (NaOH)	☐ Calibration gas (4-gas mixture)	☐ Hexane	☐ Other (*specify*) _____

WARNING: Eyewash solution shall be readily available on ALL projects where corrosives (acids or bases) are used, including sample preservatives

Applicable Safety Programs and Safe Work Practices (SWP). Attach to HASP:

- ☐ DCN 4-09 Haulage and Earth Moving
- ☐ DCN 4-10 Lead Protection Program
- ☒ SWP DCN 5-01 General Safe Work Practices
- ☒ SWP DCN 5-02 General Safe Work Practices HAZWOPER
- ☐ SWP DCN 5-03 Safe Work Practices for Office Employees
- ☒ SWP DCN 5-04 Safe Drilling Practices
- ☒ SWP DCN 5-05 Safe Direct Push (GeoProbe) Practices
- ☐ SWP DCN 5-06 Working Over or Near Water
- ☐ SWP DCN 5-07 Use of Heavy Equipment
- ☐ SWP DCN 5-08 Special Site Hazards (Firearms, Remote Sites, Mines, aircraft, etc.)
- ☐ SWP DCN 5-09 Safe Electrical Work Practices
- ☐ SWP DCN 5-10 Fall Protection Practices
- ☐ SWP DCN 5-11 Portable Ladder Safety
- ☒ SWP DCN 5-12 Drum and Container Handling Practices
- ☐ SWP DCN 5-13 Flammable Hazards and Ignition Sources
- ☐ SWP DCN 5-14 Spill and Discharge Control Practices
- ☒ SWP DCN 5-15 Heat Stress
- ☒ SWP DCN 5-16 Cold Stress
- ☒ SWP DCN 5-17 Biohazards
- ☐ SWP DCN 5-18 Underground Storage Tank Removal Practices
- ☒ SWP DCN 5-19 Safe Lifting Procedures
- ☐ SWP DCN 5-22 Hydrographic Data Collection
- ☐ SWP DCN 5-23 Permit-Required Confined Space Entry Practices
- ☐ SWP DCN 5-24 Non-Permit-Required Confined Space Entry Practices
- ☒ SWP DCN 5-26 Prevention of Sun Exposure
- ☐ SWP DCN 5-27 Respirator Cleaning Practices
- ☐ SWP DCN 5-28 Safe Use Practices for Use of Respirators
- ☐ SWP DCN 5-29 Respirator Qualitative Fit Testing Procedures
- ☐ SWP DCN 5-30 Laboratory Soil Testing Safe Work Practices
- ☒ SWP DCN 5-35 Underground Utilities, including 5-35F, Ground Disturbance Permit
- ☒ SWP DCN 5-36 Drill Rigs

Tasks Performed At Job Site that are NOT Covered by SWPs

NOTE: Many AHA's can be found on the Health & Safety intranet site at: http://home.ttemi.com/C18/Activity%20Hazard%20Analysis%20Document/default.aspx

Attach Activity Hazard Analysis (AHA) for each non-covered task

- ☒ Direct-Push Apparatus Sampling
- ☒ Monitoring Well Sampling (Pumping)
- ☒ Soil Sampling
- ☒ Observation Near Drill Rigs and Heavy Equipment
- ☐ (non-covered task)

Tetra Tech Employee Training and Medical Requirements:

Basic Training and Medical

- ☒ Initial 40 Hour Training
- ☒ 8-Hour Supervisor Training (one-time)
- ☒ Current 8-Hour Refresher Training
- ☐ Current Medical Clearance (including respirator use)
- ☒ Current First Aid Training
- ☒ Current CPR Training
- ☐ Current Respirator Fit-Test

Other Specific Training and Medical Surveillance Requirements

- ☐ Confined Space Training
- ☐ Level A Training
- ☐ Radiation Training
- ☐ OSHA 10-hour Construction Safety Training
- ☐ OSHA 30-hour Construction Safety Training
- ☐ Asbestos Awareness Training
- ☐ Asbestos B-Reader X-Ray
- ☐ Blood Lead Level and ZPP Pre, during and Post-Project
- ☐ Urinary Arsenic Level Pre and Post-Project
- ☐ Other _____
- ☐ Other _____

Materials Present or Suspected at Site	Highest Observed Concentration (specify units and sample medium)	Exposure Limit (specify ppm or mg/m³)	IDLH Level (specify ppm or mg/m³)	Primary Hazards of the Material (explosive, flammable, corrosive, toxic, volatile, radioactive, biohazard, oxidizer, or other)	Symptoms and Effects of Acute Exposure	Photoionization Potential (eV)
SVOCs (PAHs and Associated)	No Data Available	Unknown	Unknown	Unknown	Unknown	N/A
Specify Information Sources: NIOSH Pocket Guide to Hazardous Chemicals, September 2005 and American Conference of Governmental Industrial Hygienists (ACGIH). "Threshold Limit Values and Biological Exposure Indices for 2012"						

Note: In the Exposure Limit column, include Ceiling (C) and Short-Term Exposure Limits (STEL) if they are available. Also, use the following short forms and abbreviations to complete the table above.

A = Air
CARC = Carcinogenic
eV = Electron volt
U = Unknown

IDLH = Immediately dangerous to life or health
mg/m³ = Milligram per cubic meter
NA = Not available
NE = None established

PEL = Permissible exposure limit
ppm = Part per million
REL = Recommended exposure limit
S = Soil

TLV = Threshold limit value
MCL = Maximum Contaminant Level